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BULLETIN No. 24—NEW SERIES.

U. S. DEPARTMENT OF AGRICULTURE,

DIVISION OF ENTOMOLOGY.

A LIST

OF

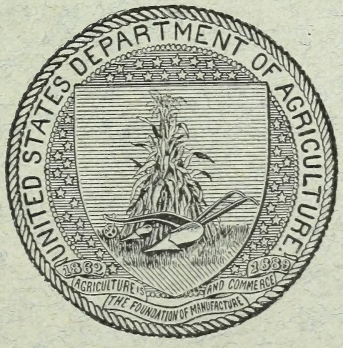
WORKS ON NORTH AMERICAN ENTOMOLOGY.

COMPILED UNDER THE DIRECTION OF THE ENTOMOLOGIST, FOR THE USE OF STUDENTS AND OTHER WORKERS, AS WELL AS FOR THOSE ABOUT TO BEGIN THE COLLECTING AND STUDY OF INSECTS.

BY

NATHAN BANKS,

Assistant.



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1900.

DIVISION OF ENTOMOLOGY.

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First Assistant Entomologist: C. L. Marlatt.
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Artist: Miss L. Sullivan.

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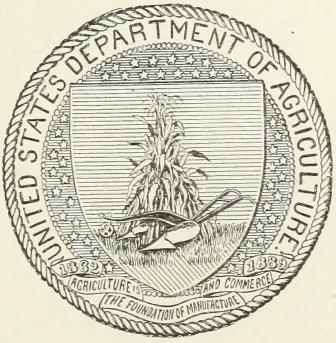

WASHINGTON:

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Division of Entomology,
Washington, D. C., July 5, 1900.

Sir: I have the honor to transmit herewith the manuscript of a bulletin for which there has been much demand among workers in entomology, and the publication of which I recommend under the title, Bulletin No. 24, new series, "A List of Works on North American Entomology."

Respectfully,

L. O. Howard,
Entomologist.

Hon. James Wilson,
Secretary of Agriculture.

INTRODUCTORY NOTE.

In 1888 there was published under the Division of Entomology, as Bulletin No. 19, "An enumeration of the published synopses, catalogues, and lists of North American insects," etc. This bulletin has served a very useful purpose in enabling a full answer to inquiries regarding the works most useful in the determination of our native insects and also regarding the most useful general works of reference. Since the publication of Bulletin No. 19, however, there has been very great activity in entomological work, and the bulletin is now well behind the times. Anyone who has ever taken up the study of entomology realizes the difficulty of securing a comprehensive review of the literature, even of a small group, while to secure publications which will enable him to determine the known species in most of the groups is more or less difficult. In fact, it is difficult to learn even the title of such papers and where to procure them. This latter difficulty will be solved by the present bulletin. Mr. Banks has not compiled a complete bibliography of the literature of North American insects, but has given briefly the references to such works and papers as are most useful for the identification of our insects. The old list has been added to greatly, and in fact the number of papers cited is almost double that of the previous bulletin.

L. O. H.

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A LIST OF WORKS ON NORTH AMERICAN ENTOMOLOGY.

COMPREHENSIVE WORKS MOST USEFUL FOR THE STUDY OF NORTH AMERICAN INSECTS.

THOMAS SAY.—Complete writings on the entomology of North America; edited by J. L. LeConte. New York, 1859.

Principally descriptions of new species; contains a glossary to entomological terms. Now out of print.

J. H. COMSTOCK.—A manual for the study of insects. Ithaca, Comstock Publishing Company, 1895. Price, $4.50.

Almost indispensable to the student.

A. S. PACKARD.—Guide to the study of insects. New York, Henry Holt & Co. Price, $5. Many editions. (First edition, Salem, 1869.)

A. S. PACKARD.—A text-book of entomology. New York, The Macmillan Company, 1898. Price, $4.50.

Especially valuable for anatomy and morphology.

ALPHEUS HYATT and J. M. ARMS.—Insecta. No. VIII, Guides for science teaching. Boston, D. C. Heath & Co., 1890. Price, $1.25.

A handy volume for the teacher.

H. C. C. BURMEISTER.—Handbuch der Entomologie. Berlin, 1832–1855. 5 vols. Vol. I. Allgemeine Entomologie.

The first volume treats of general entomology; Vol. II, part 1, of the Hemiptera; part 2, of Orthoptera; part 3, of Neuroptera; the remaining volumes of Coleoptera.

The first volume has been translated by W. E. Shuckard, under the title, Manual of Entomology. 1 vol. London, 1836.

J. O. WESTWOOD.—An introduction to the modern classification of insects, founded on the natural habits and corresponding organization of the different families. 2 vols. London, 1839–40.

W. KIRBY and W. SPENCE.—An introduction to entomology. 4 vols. London, 1815–1826. Several later editions, some in two volumes.

Contains a vast amount of interesting matter on the habits of insects.

David Sharp.—The Cambridge Natural History; Insects. 2 vols.: vol. 1, 1895; vol. 2, 1899. London, Macmillan & Co. Price, 17 shillings per volume.

A most interesting work on insects.

H. J. Kolbe.—Einführung in die Kenntnis der Insekten. Berlin, 1893.

Especially valuable for morphology.

J. Künckel d'Herculais.—Les Insectes, les Myriopodes, et les Arachnides. Édition francaise, A. E. Brehm, Merveilles de la Nature. 2 vols. Paris, 1883.

Very valuable for habits of insects.

The Standard Natural History.—Edited by J. S. Kingsley. Boston, 1884–85.

Volume II contains the insects, treated by the following authors: Hymenoptera, J. H. Comstock and L. O. Howard; Coleoptera, Geo. Dimmock; Lepidoptera, H. Edwards and C. H. Fernald; Diptera, S. W. Williston; Orthoptera, C. V. Riley; Hemiptera, P. R. Uhler; Neuroptera, A. S. Packard; Arachnida, J. H. Emerton.

Biologia Centrali-Americana.—Edited by T. Ducane Godman and Osbert Salvin. London, issued in parts. [Unfinished.]

The different subjects, as far as published, may be secured by purchase from foreign book dealers.

Frank Cowan.—Curious facts in the history of insects. 396 pp. Philadelphia, 1865.

A. S. Packard.—Entomology for beginners. New York, Henry Holt & Co., 1892. Price, $1.40.

C. V. Riley.—Directions for Collecting and Preserving Insects. Washington, D. C., 1892. Part F of Bulletin No. 39 of the U. S. National Museum.

BIBLIOGRAPHY.

H. A. Hagen.—Bibliotheca Entomologica. Die Litteratur über das ganze Gebiet der Entomologie bis zum Jahre 1862. Leipzig, 1862.

O. Taschenberg.—Bibliotheca Zoologica II, 1889; III, 1890. Leipzig.

Dealing with the literature of entomology from 1861 to 1880; the first volume, under Carus and Engelmann, brought the subject down to 1861, duplicating Hagen's work.

Zoological Record.—Published each year by the Zoological Society of London.

Bibliographia Zoologica.—Published in parts, in connection with the Zoologischer Anzeiger.

S. H. Scudder.—Nomenclator Zoologicus. Bul. No. 22, U. S. National Museum, 1882.

Contains a universal index to the genera used in zoology down to 1880.

S. Henshaw.—Bibliography of American Economic Entomology. Parts I–V. <U. S. Dept. Agric., 1890–1896.

Literature down to July 1, 1888.

N. Banks.—Bibliography of American Economic Entomology. Part VI. <U. S. Dept. Agric., 1898.

Literature from June 30, 1888, to January 1, 1897.

Current Literature is catalogued in several publications, notably Entomological News, Bulletin Société Entom. d. France, and Ill. Zeitsch. f. Entom.

Bibliography of Insects of the West Indies.—Rept. of Committee, Proc. Brit. Ass. Adv. Sci., 1888, pp. 1–28.

HYMENOPTERA.

I.—CATALOGUES.

E. T. Cresson.—Catalogue of the described species of North American Hymenoptera. <Proc. Entom. Soc. Phila., Vol. I, 1861–1863.

E. T. Cresson.—Catalogue of species and bibliography. Part 2 of Synopsis of the Hymenoptera of America, north of Mexico. Synopsis and Catalogue. Price $3. Transactions of the Am. Entom. Soc., Supplementary volume, 1887. Philadelphia, 1887.

C. G. de Dalla Torre.—Catalogus Hymenopterorum. 10 vols. Leipzic, 1893–1900.

Vol. I, Tenthredinidæ; II, Cynipidæ; III, Ichneumonidæ, etc.; IV, Braconidæ; V, Chalcididæ and Proctotrupidæ; VI, Chrysididæ; VII, Formicidæ; VIII, Fossores; IX, Vespidæ; X, Apidæ. Each volume can be purchased separately.

II.—GENERAL WORKS ON CLASSIFICATION.

E. T. Cresson.—Synopsis of the families and genera of the Hymenoptera, north of Mexico, together with a catalogue of the described species and bibliography. Transactions Am. Entom. Soc., Supplementary volume, Part I, 1887.

The second part contains the Catalogue of Species and Bibliography.

W. H. Ashmead.—Classification of the horntails and sawflies, or the suborder Phytophaga. <Can. Entom., 1898, 7 parts.

W. H. Ashmead.—Classification of the bees, or the superfamily Apoidea. <Trans. Amer. Entom. Soc., 1899, pp. 49–100.

W. H. Ashmead.—Superfamilies in the Hymenoptera and generic synopses of the families Thynnidæ, Myrmosidæ, and Mutillidæ. <Journ. N. Y. Entom. Soc., March, 1899, pp. 45–60.

W. H. Ashmead.—Classification of the entomophilous wasps, or the superfamily Sphegoidea. <Can. Entom., 1899, 7 parts.

W. H. Ashmead.—Classification of the fossorial, predaceous, and parasitic wasps, or the superfamily Vespoidea. <Can. Entom., 1900, pp. 145–155, 185–188; etc.

W. J. Fox.—A proposed classification of the fossorial Hymenoptera of North America. <Proc. Acad. Nat. Sci. Phila., 1894, pp. 292–307.

III.—MONOGRAPHS AND SYNOPSES.

TENTHREDINIDÆ AND UROCERIDÆ.

Edward Norton.—Catalogue of the described Tenthredinidæ and Uroceridæ of North America. <Trans. Amer. Entom. Soc., Vol. I, 1867, pp. 31–84 and 193–280; Vol. II, 1868–69, pp. 211–242 and 321–367.

Gives synoptic tables of genera and species of both families; the Uroceridæ are treated in Vol. II, pp. 349–367.

E. T. Cresson.—Catalogue of the Tenthredinidæ and Uroceridæ of North America. <Trans. Amer. Entom. Soc., Vol. VIII, 1880, pp. 53–68.

A synonymical reference list of the species; the Uroceridæ are treated on pp. 66–67.

Peter Cameron.—Monograph of the British Phytophagous Hymenoptera. 2 vols. London, 1882–1885.

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A. D. MacGillivray.—New species of Tenthredinidæ, with table of species of Strongylogaster and Monoctenus. <Can. Entom., 1894, pp. 324–328.

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C. R. Osten Sacken.—Contributions to the natural history of the Cynipidæ of the United States. <Proc. Entom. Soc. Phila., Vol. II, 1863–1864, pp. 33–49; Vol. IV, 1865, pp. 331–380; Trans. Amer. Entom. Soc., Vol. III, 1870–1871, pp. 54–64.

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E. T. Cresson.—Descriptions of North American Hymenoptera in the collection of the Entomological Society of Phlladelphia. <Proc. Entom. Soc. Phila., Vol. III, 1864, pp. 131–196.

Consists chiefly of a synopsis of the North American species of the genus Ichneumon.

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Tabulates the genera Pimpla, Polysphincta, Glypta, Arenetra, Lampronota, Xylonomus, Odontomerus, with a list of all species.

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W. H. Ashmead.—A revised generic table of the Chalcidinæ. <Entom. Amer., 1888, pp. 87–88.

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C. Emery.—Beiträge zur Kenntniss der nordamerikanischen Ameisenfauna. <Part I, Zool. Jahrb., Abth. f. Syst., Vol. VII, p. 633–682 (1894); Part II, [ibid.] Vol. VIII, pp. 257–360 (1895).

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W. H. Patton.—Some characters useful in the study of Sphecidæ. <Proc. Boston Soc. Nat. Hist., Vol. XX, 1880, pp. 378–385.

Critical notes on genera and species.

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W. H. Patton.—The American Bembecidæ: Tribe Stizini. <Bul. U. S. Geolog. and Geogr. Survey, Vol. V, No. 3, 1879, pp. 341–347.

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A. Handlirsch.—Monographie der mit Nysson und Bembex verwandten Grabwespen. 7 parts. <Stzber. K. Akad. d. Wissensch., Wien, 1887–'93, 1,150 pp., 23 pls.

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A. S. Packard.—Revision of the Fossorial Hymenoptera of North America. I. Crabronidæ and Nyssonidæ. <Proc. Entom. Soc. Phila., Vol. VI, 1866, pp. 39–114 and 353–444.

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W. H. Patton.—List of North American Larridæ. <Proc. Boston Soc. Nat. Hist., Vol. XX, 1880, pp. 385–397.

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A. S. Packard.—[See work cited under Larridæ.]

E. T. Cresson.—Descriptions of the species belonging to the genus Nysson, inhabiting North America. <Trans. Amer. Entom. Soc., Vol. IX, 1881–'82, pp. 273–284.

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W. J. Fox.—Studies among the fossorial Hymenoptera. <Entom. News, 1894, pp. 86–89; 126–128; 201–203.

Synopses of Alyson, Didineis, and Mellinus.

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BULLETIN No. 1.—Destruction of the young or unfledged Locusts (*Caloptenus spretus*). (1877.) [pp. 15.]

BULLETIN No. 2.—On the Natural History of the Rocky Mountain Locust and on the habits of the young or unfledged insects as they occur in the more fertile country in which they will hatch the present year. (1877.) [pp. 14, figs. 10.]

BULLETIN No. 3.—The Cotton Worm. Summary of its Natural History, with an Account of its Enemies, and the best Means of controlling it; being a Report of Progress of the Work of the Commission. By C. V. Riley, M. A., Ph. D. (1880.) [pp. 144, figs. 84, pl. 1.]

BULLETIN No. 4. The Hessian Fly. Its Ravages, Habits, Enemies, and Means of preventing its Increase. By A. S. Packard, M. D. (1880.) [pp. 43, figs. 1, pls. 2, map 1.]

BULLETIN No. 5.—The Chinch Bug. Its History, Characters, and Habits, and the Means of Destroying it or counteracting its Injuries. By Cyrus Thomas, Ph. D. (1879.) [pp. 44, figs. 10, map 1.]

BULLETIN No. 6.—General Index and Supplement to the nine Reports on the Insects of Missouri. By Charles V. Riley, M. A., Ph. D. (1881.) [pp. 177.]

BULLETIN No. 7.—Insects injurious to Forest and Shade Trees. By A. S. Packard, M. D. (1881.) [pp. 275, figs. 100.]

FIRST ANNUAL REPORT, for the year 1877, relating to the Rocky Mountain Locust and the best Methods of preventing its Injuries and of guarding against its Invasions, in pursuance of an Appropriation made by Congress for this purpose. With maps and illustrations. (1878.) [pp. 477+294, figs. 111, pls. 5, map 1.]

SECOND REPORT, for the years 1878 and 1879, relating to the Rocky Mountain Locust and the Western Cricket, and treating of the best Means of subduing the Locust in its permanent Breeding-grounds, with a view of preventing its Migrations into the more fertile Portions of the trans-Mississippi country, in pursuance of Appropriations made by Congress for this purpose. With maps and illustrations. (1880.) [pp. XVIII+322+22, figs. 10, pls. 17, maps 7.]

THIRD REPORT, relating to the Rocky Mountain Locust, the Western Cricket, the Army Worm, Canker Worms, and the Hessian Fly; together with Descriptions of Larvæ of injurious Forest Insects, Studies of embryological Development of the Locust and of other Insects, and on the systematic Position of the Orthoptera in Relation to other Orders of insects. With maps and illustrations. (1883.) [pp. XVIII+347+91, figs. 14, pls. 64, maps 3.]

FOURTH REPORT, being a revised edition of Bulletin No. 3, and the final report on the Cotton Worm and Boll Worm. By Charles V. Riley, Ph. D. (1885.) [pp. XXXVIII+399+147, figs. 45, pls. 64, maps 2.]

FIFTH REPORT, Forest insects, being a revised and enlarged edition of Bulletin No. 7. By A. S. Packard. (1890.) [pp. VIII+957, figs. 306, pls. 40.]

U. S. DEPARTMENT OF AGRICULTURE.

[The annual reports of the Entomologist are contained in the corresponding annual reports of the Department of Agriculture. A limited author's edition, separately bound and with table of contents and index, is published each year.]

DIVISION OF ENTOMOLOGY.

BULLETIN No. 1.—Reports of Experiments, chiefly with Kerosene, upon the Insects injuriously affecting the Orange Tree and the Cotton Plant, made under the Direction of the Entomologist. (1883.) [pp. 62.]

BULLETIN No. 2.—Reports of Observations on the Rocky Mountain Locust and Chinch Bug, together with Extracts from the Correspondence of the Division on Miscellaneous Insects. (1883.) [pp. 36.]

BULLETIN No. 3.—Reports of Observations and Experiments in the practical Work of the Division, made under the Direction of the Entomologist. With plates. (1883.) [pp. 75, pls. 3.]

BULLETIN No. 4.—Reports of Observations and Experiments in the practical Work of the Division, made under the Direction of the Entomologist, together with Extracts from Correspondence on Miscellaneous Insects. (1884.) [pp. 102, figs. 4.]

BULLETIN No. 5.—Descriptions of North American Chalcididæ from the Collections of the U. S. Department of Agriculture and of Dr. C. V. Riley, with biological Notes. [First paper.] Together with a List of the described North American Species of the Family. By L. O. Howard, M. Sc., Assistant, Bureau of Entomology. (1885.) [pp. 47.]

BULLETIN No. 6.—The imported Elm-leaf Beetle. Its Habits and Natural History, and Means of counteracting its Injuries. (1885.) [pp. 18, fig. 1, pl. 1.]

Bulletin No. 7.—The Pediculi and Mallophaga affecting Man and the Lower Animals. By Herbert Osborn. (1890.) [pp. 56, figs. 42.]

Bulletin No. 8.—The Periodical Cicada. An Account of *Cicada septendecim* and its tredecim Race, with a Chronology of all of the broods known. By Charles V. Riley, Ph. D. (1885.) [pp. 46, figs. 8.]

Bulletin No. 9.—The Mulberry Silk-worm; being a Manual of Instructions in Silk Culture. By Charles V. Riley, M. A., Ph. D. (1886.) [pp. 65, figs. 29, plates 2.]

Bulletin No. 10.—Our Shade Trees and their Insect Defoliators. Being a Consideration of the four most injurious Species which affect the Trees of the Capital; with Means of destroying them. By Charles V. Riley, Entomologist. (1887.) [pp. 75, figs. 27.]

Bulletin No. 11.—Reports of Experiments with various Insecticide Substances, chiefly upon insects affecting garden crops, made under the Direction of the Entomologist. (1886.) [pp. 34.]

Bulletin No. 12.—Miscellaneous Notes on the work of the Division of Entomology for the Season of 1885; prepared by the Entomologist. (1886.) [pp. 45, pl. 1.]

Bulletin No. 13.—Reports of Observations and Experiments in the practical Work of the Division, made under the Direction of the Entomologist. (With illustrations.) (1887.) [pp. 78, figs. 4.]

Bulletin No. 14.—Reports of Observations and Experiments in the practical Work of the Division, made under the Direction of the Entomologist. (1887.) [pp. 62, figs. 2, pl. 1.]

Bulletin No. 15.—The Icerya, or Fluted Scale, otherwise known as the Cottony Cushion Scale. (Reprint of some recent Articles by the Entomologist and of a Report from the Agricultural Experiment Station, University of California.) (1887.) [pp. 40.]

Bulletin No. 16.—The Entomological Writings of Dr. Alpheus Spring Packard. By Samuel Henshaw. (1887.) [pp. 49.]

Bulletin No. 17.—The Chinch Bug. A general Summary of its History, Habits, Enemies, and of the Remedies and Preventives to be used against it. By L. O. Howard, M. S., Assistant Entomologist. (1888.) [pp. 48, figs. 10.]

Bulletin No. 18.—The Life and Entomological Work of the late Townend Glover. By C. R. Dodge. (1888.) [pp. 68.]

Bulletin No. 19.—An Enumeration of the Published Synopses, Catalogues, and Lists of North American Insects. By. E. A. Schwarz. (1888.) [pp. 77.]

Bulletin No. 20.—The Root-knot Disease of the Peach, Orange, and other plants in Florida, due to the work of Anguillula. By J. C. Neal. (1889.) [pp. 31, pls. 21.]

BULLETIN No. 21.—Report of a Trip to Australia, made under the Direction of the Entomologist, to Investigate the Natural Enemies of the Fluted Scale. By Albert Koebele. (1890.) [pp. 32.]

BULLETIN No. 22.—Reports of Observations and Experiments in the Practical Work of the Division. (1890.) [pp. 110.]

BULLETIN No. 23.—Reports of Observations and Experiments in the Practical Work of the Division. (1891.) [pp. 83.]

BULLETIN No. 24.—The Boll Worm of Cotton. A report of progress in a supplementary investigation of this insect. By F. W. Mally. (1891.) [pp. 50.]

BULLETIN No. 25.—Destructive Locusts. A popular consideration of a few of the more injurious locusts (or "grasshoppers") of the United States, together with the best means of destroying them. By C. V. Riley. (1891.) [pp. 62, plates 12.]

BULLETIN No. 26.—Reports of Observations and Experiments in the Practical Work of the Division. (1892.) [pp. 95.]

BULLETIN No. 27.—Reports on the Damage by Destructive Locusts during the Season of 1891. (1892.) [pp. 64.]

BULLETIN No. 28.—The More Destructive Locusts of America, North of Mexico. By Lawrence Bruner. (1893.) [pp. 40.]

BULLETIN No. 29.—Report on the Boll Worm of Cotton. By F. W. Mally. (1893.) [pp. 73.]

BULLETIN No. 30.—Reports of Observations and Experiments in the Practical Work of the Division. (1893.) [pp. 67.]

BULLETIN No. 31.—Catalogue of the Exhibit of Economic Entomology at the World's Columbian Exposition. (1893.) [pp. 121.]

BULLETIN No. 32.—Reports of Observations and Experiments in the Practical Work of the Division. (1894.) [pp. 59.]

BULLETIN No. 33.—Legislation against Injurious Insects; a compilation of the laws and regulations in the United States and British Columbia. By L. O. Howard. (1893.) [pp. 46.]

BULLETIN No. 1, NEW SER[illegible] The Honey Bee: A manual of instruction in Apiculture. [illegible]rank Benton. (1896.) [pp. 118, pls. 11.]

BULLETIN No. 2, NEW SERIES.—Proceedings of the Seventh Annual Meeting of the Association of Economic Entomologists. (1895.) [pp. 100.]

BULLETIN No. 3, NEW SERIES.—The San Jose Scale: Its occurrence in the United States with a full account of its life history and the remedies to be used against [illegible]. Howard and C. L. Marlatt. (1896.) [pp. 80, plate 1.]

BULLETIN No. 4, NEW SERIES.—The principal Household Insects of the United States. By L. O. Howard and C. L. Marlatt. With a Chapter on Insects affecting dry Vegetable Foods. By F. H. Chittenden. (1896.) [pp. 130.]

BULLETIN No. 5, NEW SERIES.—Insects affecting Domestic Animals: An account of the species of importance in North America, with mention of related forms occurring on other animals. By Herbert Osborn. (1896.) [pp. 302, pls. 5.]

BULLETIN No. 6, NEW SERIES.—Proceedings of the Eighth Annual Meeting of the Association of Economic Entomologists. (1896.) [pp. 100.]

BULLETIN No. 7, NEW SERIES.—Some Miscellaneous Results of the Work of the Division of Entomology. (1897.) [pp. 87.]

BULLETIN No. 8, NEW SERIES.—Some little-known Insects affecting Stored Vegetable Products: A collection of articles detailing certain original observations made upon insects of this class. By F. H. Chittenden. (1897.) [pp. 45.]

BULLETIN No. 9, NEW SERIES.—Proceedings of the Ninth Annual Meeting of the Association of Economic Entomologists. (1897.) [pp. 87.]

BULLETIN No. 10, NEW SERIES.—Some Miscellaneous Results of the Work of the Division of Entomology. (1898.) [pp. 99.]

BULLETIN No. 11, NEW SERIES.—The Gipsy Moth in America: A summary account of the introduction and spread of *Porthetria dispar* in Massachusetts and of the efforts made by the State to repress and exterminate it. By L. O. Howard. (1897.) [pp. 39.]

BULLETIN No. 12, NEW SERIES.—The [illegible] Scale in 1896–97. By L. O. Howard. (1898.) [pp. 3[illegible]]

BULLETIN No. 13, NEW SERIES.—Recent Laws against Injurious Insects in North America, together with the Laws relating to Foul Brood. By L. O. Howard. (1898.) [pp. 68.]

BULLETIN No. 14, NEW SERIES.—The Periodical Cicada: An account of *Cicada septendecim*, its natural enemies, and the means of preventing its injury, together with a summary of the distribution of the different broods. By C. L. Marlatt. (1898.) [pp. 148, pl. 1.]

BULLETIN No. 15, NEW SERIES.—The Chinch Bug: Its probable origin and diffusion, its habits and development, natural checks and remedial and preventive measures, with mention of the habits of an allied European species. By F. M. Webster. (1898.) [pp. 82.]

BULLETIN No. 16, NEW SERIES.—The Hessian Fly in the United States. By Herbert Osborn. (1898.) [pp. 57, pls. 2.]

BULLETIN No. 17, NEW SERIES.—Proceedings of the Tenth Annual Meeting of the Association of Economic Entomologists. (1898.) [pp. 104.]

BULLETIN No. 18, NEW SERIES.—Some Miscellaneous Results of the Work of the Division of Entomology. III. (1898.) [pp. 101.]

BULLETIN No. 19, NEW SERIES.—Some Insects Injurious to Garden and Orchard Crops. A series of articles dealing with insects of this class. By F. H. Chittenden. (1899.) [pp. 99.]

BULLETIN No. 20, NEW SERIES.—Proceedings of the Eleventh Annual Meeting of the Association of Economic Entomologists. (1899.) [pp. 111.]

BULLETIN No. 21, NEW SERIES.—Preliminary Report on the Insect Enemies of Forests in the Northwest. By A. D. Hopkins. (1899.) [pp. 27.]

BULLETIN No. 22, NEW SERIES.—Some Miscellaneous Results of the Work of the Division of Entomology. IV. (1900.) [pp. 109.]

BULLETIN No. 23, NEW SERIES.—Some Insects Injurious to Garden Crops. By F. H. Chittenden. (1900.) [pp. 92.]

INSECTS AFFECTING THE ORANGE.—Report on the Insects Affecting the Culture of the Orange and other Plants of the Citrus Family, with Practical Suggestions for their Control or Extermination. By H. G. Hubbard. (1885.) [pp. x+227, figs. 95, pls. 14.]

INSECT LIFE.—Seven volumes. Begun in July, 1888, ended July, 1895. General index to the seven volumes of Insect Life, pp. 145, 1897.

REPORT ON COTTON INSECTS.—By J. Henry Comstock. (1879.) [pp. 511, figs. 77, pls. 3.]

SPECIAL REPORT No. 11.—The Silkworm; being a brief Manual of Instructions for the Production of Silk. Prepared, by direction of the Commissioner of Agriculture, by C. V. Riley, M. A., Ph.D., Entomologist. (First ed., 1879; fifth ed., 1885.) [pp. 37, figs. 8.]

SPECIAL REPORT No. 35.—Report on Insects injurious to Sugar Cane. Prepared, under direction of the Commissioner of Agriculture, by J. Henry Comstock, Entomologist. (1881.) [pp. 11, figs. 3.]

[NOTE.—During the years 1864 to 1876, inclusive, the Department of Agriculture published regularly monthly reports, mainly statistical in their character (replaced since 1876 by the series of monthly "Crop Reports"), but which contained many short articles by the Entomologist, none of which would come within the scope of the present bulletin. Reference to these articles may be facilitated by consulting the "Synoptical Index of the Reports of the Statistician, 1863–1894" (Bul. No. 2, Division of Publications, Department of Agriculture). In like manner the "Index to the Annual Reports of the Department of Agriculture, 1837–1893" (Bul. No. 1 of the same series), may be used to facilitate reference to the entomological reports, articles, and notes appearing in the Annual Reports of the Department.

THE MORE IMPORTANT PERIODICALS CITED IN THIS BULLETIN.

AMERICAN PERIODICALS.

The American Naturalist. A monthly journal devoted to the natural sciences in their widest sense. Thrity-three volumes published up to 1900.

Annals of the Lyceum of Natural History of New York. Eight volumes. 1824–1867.

Annals of the New York Academy of Science. New York, N. Y. Thirteen volumes.

Bulletin of the American Museum of Natural History. New York, N. Y. Ten volumes published.

Bulletin of the Brooklyn Entomological Society. Seven volumes. 1878–1885.

Bulletin of the Buffalo Society of Natural History. Five volumes completed, beginning with 1874.

Bulletin of the Illinois State Laboratory of Natural History. Urbana, Ill. Five volumes published.

Bulletins of the United States Geological and Geographical Survey of the Territories, F. V. Hayden in charge. Department of the Interior; beginning with 1875.

Bulletins of the United States National Museum. Department of the Interior; beginning with 1875.

The Canadian Entomologist. Edited by William Saunders and lately by C. J. S. Bethune; thirty-one volumes published up to the end of 1900. Published at London, Ontario.

Entomologica Americana. Published by the Brooklyn Entomological Society, at Brooklyn, N. Y. Seven volumes.

Entomological News, and proceedings of the entomological section of the Academy of Natural Sciences. Philadelphia, Pa. Commenced in 1890.

The Entomological Student. Philadelphia. Begun in April, 1900.

Journal of the Academy of Natural Sciences of Philadelphia. Commencing with 1817.

Journal of the New York Entomological Society. Commenced in 1893.

The Kansas University Quarterly. Lawrence, Kans. Eight volumes published.

Memoirs of the Boston Society of Natural History. Commencing with 1866.

Occasional Memoirs of the Chicago Entomological Society. Commenced in 1900.

Proceedings of the Academy of Natural Sciences of Philadelphia. Beginning with 1841.

Proceedings of the American Philosophical Society of Philadelphia. Commencing with 1860.

Proceedings of the American Academy of Arts and Sciences. Boston, Mass. Thirty-five volumes published.

Proceedings of the Boston Society of Natural History. Commencing with 1841.

Proceedings of the California Academy of Sciences. San Francisco, Cal. Since 1854.

Proceedings of the Davenport Academy of Natural Sciences. Davenport, Iowa. Six volumes published.

Proceedings of the Entomological Society of Philadelphia. Six volumes. 1861–1867.

Proceedings of the Entomological Society of Washington. Four volumes published.

Proceedings of the Iowa Academy of Sciences. Des Moines, Iowa. Six volumes published.

Proceedings of the Kansas Academy of Sciences. Topeka, Kans. Sixteen volumes published.

Proceedings of the United States National Museum. Department of the Interior. Beginning with 1878.

Papilio. Devoted exclusively to Lepidoptera. Organ of the New York Entomological Club. Four volumes. 1881–1884.

Psyche. Organ of the Cambridge Entomological Club. Eight volumes issued up to date. Published at Cambridge, Mass.

Reports of the United States Geological and Geographical Survey of the Territories. Department of the Interior. Beginning with 1867.

Smithsonian Miscellaneous Collections. Smithsonian Institution, Washington, D. C. Beginning with 1862.

Transactions of the Academy of Science of Saint Louis. Ten volumes published.

Transactions of the American Entomological Society and proceedings of the Entomological Section of the Academy of Natural Sciences. Beginning with 1868, 26 volumes published up to 1900. Published at Philadelphia.

Transactions of the American Philosophical Society of Philadelphia. Second series beginning with 1818.

FOREIGN PERIODICALS.

ANNALES DE LA SOCIÉTÉ ENTOMOLOGIQUE DE BELGIQUE. Beginning with 1860. Published at Brussels.

ANNALES DE LA SOCIÉTÉ ENTOMOLOGIQUE DE FRANCE. Beginning with 1832. Published at Paris.

BERLINER ENTOMOLOGISCHE ZEITSCHRIFT. Commencing with 1857.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT. Herausgegeben von Dr. G. Kraatz. Berlin. Beginning with 1881.

ENTOMOLOGISCHE ZEITUNG. Herausgegeben von dem entomologischen Verein zu Stettin. Beginning with 1840.

LINNÆA ENTOMOLOGICA. Herausgegeben vom entomologischen Verein zu Stettin. Sixteen volumes. Berlin, 1846–1866.

ÖFVERSIGT AF KONGL. SVENSKA VETENSKAPS ACADEMIENS FÖRHANDLINGAR. Beginning with 1844. Published at Stockholm.
Proceedings of the Royal Swedish Academy of Sciences.

SITZUNGSBERICHTE DER MATHEMATISCH-NATURWISSENSCHAFTLICHEN CLASSE DER KAISERLICHEN ACADEMIE DER WISSENSCHAFTEN ZU WIEN. Beginning with 1848.

TRANSACTIONS OF THE LINNEAN SOCIETY OF LONDON. Beginning with 1791.

TRANSACTIONS OF THE LONDON ENTOMOLOGICAL SOCIETY. Beginning with 1836.

VERHANDLUNGEN DER ZOOLOGISCH-BOTANISCHEN GESELLSCHAFT IN WIEN. Beginning with 1852.

ZEITSCHRIFT FÜR DIE ENTOMOLOGIE. Herausgegeben von E. F. Germar. Five volumes. Leipzig, 1839–1844.

MITTHEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT. Bulletin de la Société entomologique suisse. Ten volumes published up to 1900. Published at Geneva.

ANNALS AND MAGAZINE OF NATURAL HISTORY. London. Beginning with 1838.

REVUE ET MAGASIN DE ZOOLOGIE PURE ET APPLIQUÉE. Paris. Beginning with 1839.

ZEITSCHRIFT FÜR WISSENSCHAFTLICHE ZOOLOGIE. Leipzig. Beginning with 1848.

ARCHIV FÜR NATURGESCHICHTE. Berlin. Beginning with 1835.

ILLUSTRIERTE WOCHENSCHRIFT (now Zeitschrift) FÜR ENTOMOLOGIE. Neudamm, Germany. Commenced in 1896.

ENTOMOLOGISK TIDSKRIFT. Stockholm. Twenty volumes published.

REVUE D'ENTOMOLOGIE, PUBLIÉE PAR LA SOCIÉTÉ FRANÇAISE D'ENTOMOLOGIE. Caen, France. Eighteen volumes published.

Wiener entomologische Zeitung. Vienna. Eighteen volumes published.

The Entomologist's Record and Journal of Variation. London. Eleven volumes published.

Tijdschrift voor Entomologie. 's Gravenhage, Holland. Forty-two volumes published.

Bullettino della Societa Entomologica Italiana. Florence. Thirty-one volumes published.

Horæ Societatis Entomologicæ Rossicæ. St. Petersburg. Thirty-three volumes published.

Annales des Sciences Naturelles. Paris. Commencing with 1824.

HOW TO OBTAIN ENTOMOLOGICAL BOOKS AND PAMPHLETS.

Comparatively few of the works treating of the classification of North American insects have been published as separate books; but such as have been so published, if of comparatively recent date, can be obtained through the regular book trade. By far the greater number of the monographs and synopses mentioned in the preceding pages have been published in scientific periodicals and transactions of scientific societies. These periodicals and transactions can be obtained through the societies which publish them and through the publishers; but, in the case of transactions, single volumes, and more especially single papers, are seldom sold, and the older volumes are liable to be out of print. Moreover, the expense attending the purchase of all of the periodicals containing the publications on a given order of insects will be so great as to put them beyond the reach of most entomologists. The custom of placing at the disposal of authors a number of separate copies of their papers overcomes this difficulty to some extent and creates a small supply. Thus it often happens that a person interested can obtain a copy of a scientific paper by addressing the author personally. Many of these separate copies also get into the possession of dealers in second-hand books, and can be purchased from them. The American Entomological Society, Philadelphia, Pa., and also a few other societies here and in Europe offer for sale from their duplicates many of these authors' extras, and in some cases publish lists. There are, moreover, certain business establishments which make a specialty of the sale of works and pamphlets on natural history, including entomology, and it is chiefly through such establishments that the student is enabled to secure the larger portion of the works needed.

In Europe there are several of considerable reputation. All of those publishing catalogues of entomological books and pamphlets are included in the following list:

R. Friedlaender & Sohn, Carlstrasse, 11, Berlin, Germany.

Ed. André, 21, Boulevard Bretonnière, Beaune (Côte-d'Or), France.
H. W. Schmidt, Rannische Strasse, Nr. 1, Halle a. S, Germany.
J. B. Baillière et fils, 19, Rue Hautefeuille, Paris, France.
Oswald Weigel, Königsstrasse, 1, Leipzig, Germany.
U. Hoepli, Corso Vitt. Eman., 37, Milan, Italy.
Otto Harrassowitz, Querstrasse, 14, Leipzig, Germany.
William Wesley & Son, 28 Essex street, Strand, London, England.
Max Weg, Leplaystrasse, 1, Leipzig, Germany.
Paul Klincksieck, 52, Rue des Écoles, Paris, France.
K. F. Koehler's Antiquarium, Kurprinzstrasse, 6, Leipzig, Germany.
F. L. Dames, Voss-Strasse, 32, Berlin, Germany.
Dulau & Co., 37 Soho square, London, W., England.
A. Hermann, 8, Rue de la Sorbonne, Paris, France.
John Wheldon & Co., 58 Great Queen street, London, England.
Franz Pietzcker, Tübingen, Germany.
Ernst Heyne, Hospitalstrasse, 2, Leipzig, Germany.
Joseph Baer, Rossmarkt, 18, Frankfurt-am-Main, Germany.
List & Francke, Thalstrasse, Nr. 2, Leipzig, Germany.
W. Junk, Rathenowerstrasse, 22, Berlin NW. 5, Germany.

A not inconsiderable portion of the North American literature on the classification of insects has been published by the General Government through various channels, and foremost among them are the Smithsonian Institution, the U. S. Department of Agriculture, the U. S. National Museum, the U. S. Geological and Geographical Survey, and the reports of the various surveys of the Territories. Many of these publications are distributed free of cost to anyone applying for them; while others, like certain of the Smithsonian publications, are sold at a moderate price to cover the cost of publication. Many of them are out of print, and can only be obtained through natural history book dealers.

The State reports of Lintner and Forbes can be obtained from the secretaries of the respective State agricultural societies at Albany, N. Y., and Springfield, Ill., while the reports of the entomologists of the State experiment stations can be obtained from the directors of the respective stations. The older reports of the State entomologist of Missouri and the State entomologists of Illinois (Walsh, Le Baron, and Thomas) are all out of print and can only be obtained by purchase from secondhand dealers. The same may be said of the well-known and often quoted reports of Dr. Fitch, which were published with the old volumes of the Transactions of the New York State Agricultural Society.

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